Workshop Regarding Regulatory Fuels Activities

April 5, 2001

California Environmental Protection Agency

Air Resources Board

Agenda

- Introductions
- Development of amendments to CARB Diesel Regulations
- Evaluation of Diesel Fuel Lubrication Oils, Lubricity, and Additives
- Review of MTBE and other ether De Minimus Levels in CaRFG3 Regulations
- Ongoing Work on Permeation from the Effects of Ethanol in Gasoline
- Ongoing Work on Commingling from the Effects of Ethanol in Gasoline
- Discussion of Legal/Enforcement Issues
- Open Discussion
- Closing Remarks

Proposed Amendments for California Diesel Fuel

- Lower CARB diesel sulfur limit to 15 ppm
- Applies to
  - On-road and off-road vehicle uses
  - Stationary sources (Air Toxic Control Measure)
- Necessary to implement diesel PM risk reduction plan

Proposed Amendments for California Diesel Fuel (Continued)

- No changes to aromatic hydrocarbon specifications

Proposed Amendments for California Diesel Fuel (Continued)

- Implementation concurrent with EPA rule - 2006
  - No phase-in
  - At this time, no provisions for small refiners

Proposed Amendments for California Diesel Fuel (Continued)

- Replace test method for determining sulfur content
  - Current test method ASTM D2622-94 (x-ray fluorescence) lacks adequate precision at 15 ppm
  - ASTM D5453-93 (ultraviolet fluorescence)
    - has a detection limit of 1 ppm

Proposed Amendments for California Diesel Fuel (Continued)

- Update diesel alternative formulation certification procedures
  - Revise sulfur specification in reference fuel (15 ppm)
  - Delete sulfate credit for candidate fuel
  - Provisions to ensure candidate fuel are comparable to produced fuels

Diesel Engine Lubrication Oils

- Two Groups Pursuing Research:
  - Advanced Petroleum Based Fuels - Diesel Emission Control (APBF-DEC) Lubricants Work Group
    - Industry/government work group
  - Diesel Aftertreatment Sensitivity to Lubricant (DASL)
    - initiated by Southwest Research Institute

Status of APBF-DEC Lubricants Work Group

- Involved in the last round of proposal evaluation for initial 12 month program
- Initial program to characterize effect on engine out emissions of :
  - Lubricant base stock
  - Lubricant additives
- Expect to make an award mid-April

New Research Consortium: Diesel Aftertreatment Sensitivity to Lubricant (DASL)

- Formed by Southwest Research Institute to compliment APBF-DEC Lubricants program
- Objective: probe impact of sulfur and other lubricant/additive components (including zinc, calcium, barium, magnesium, boron, and anti-wear agents) on diesel emission control systems
- Status: currently seeking funding

Diesel Fuel Lubricity

- Refinery industry well versed in ensuring adequate lubricity for desulfurized fuel
  - voluntarily maintaining 1994 Governor's Diesel Fuel Task Force minimum lubricity level
- ASTM Diesel Fuel Lubricity Task Force completing a major round robin program
  - Seeking to improve precision and response of lubricity measurement for additized fuel
- Continuing dialogue with industry to determine need for a lubricity standard

Diesel Additives

- Continue dialogue with industry to determine potential to provide deposit clean-up and keep clean benefits

CaRFG3 Issues

Gasoline Certification Fuel

- Plan regulatory update to the CaRFG2 certification fuel specifications
- Planning additional workshops in the near future
- Will work closely with auto, oil, and ethanol industries and the ARB Mobile Source Control Division
- Scheduled for consideration by the ARB Board in November 2001

MTBE Deminimus Levels

- Review current CaRFG3 MTBE deminimus limits
- Change current MTBE deminimus limits to oxygen content equivalent

Gasoline

Ongoing Permeation Emission Evaluation

- Contract awarded to investigate potential permeation emissions losses
  - Performed literature search for permeation rates with ethanol and non-ethanol gasolines
    - Confirms ethanol increases permeation emission losses
  - Gathering data on permeable fuel system materials in vehicle fleet to estimate statewide permeation emissions
  - Will design test program to evaluate permeation rates to increase available data
- Draft final report to be available near future

Ongoing Work on Commingling

- Board prohibited use of MTBE beginning December 31, 2002
- Federal oxygen requirement still in place
  - Ethanol only allowable oxygenate
  - 70% of California fuel
- Board directed the staff to further evaluate real-world impacts of mixing ethanol and non-ethanol gasoline

Evaluation of Real-World Impacts

- ARB Commingling Study
  - Established ARB/Industry workgroup
  - Evaluate consumer refueling practices
  - Vehicle fuel sampling program
- Results to be presented to Board in November 2001

Evaluation of Consumer Refueling Practices

- Information needed to estimate the percentage of refueling events expected to result in commingling
  - Brand and grade loyalty data
  - When and how much?
- Potential sources of information
  - Industry marketing data
  - Public survey data
  - Caltrans data regarding inter-regional trips between attainment and nonattainment areas

Vehicle Fuel Sampling Program

- Draft Commingling Study Fuel Sampling Protocol
  - Currently receiving comments
  - Initial field evaluation of protocol in June 2001
- Implementation of finalized protocol in August 2001
- Potential Issues Identified
  - Consumer cooperation
  - Site location (competition proximity, station volume, and customer type)
  - Frequency of site location changes
  - Vehicle tank access
  - Initial fuel level and volume dispensed

Legal/Enforcement Issues

Open Discussion

Closing Remarks